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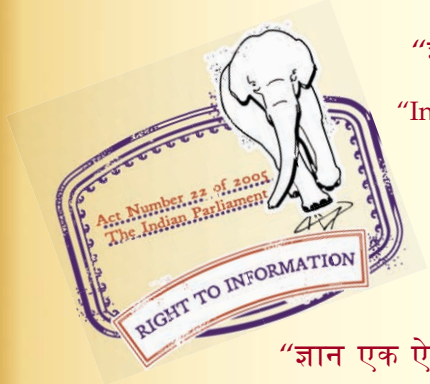
IS 8271-5-6 (1988): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series CX for Oscillators, Section 6: Quartz Crystal Unit type CX-06 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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Indian Standard (Reaffirmed 2006)

SPECIFICATION FOR QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION

PART 5 SERIES CX FOR OSCILLATORS

Section 6 Quartz Crystal Unit Type CX-06

0. General — This standard shall be read in conjunction with IS : 8271 (Part 1)-1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (*first revision*)'.

1. Outline and Dimensions — Holder outline shall conform to Type CX [*see* IS : 4570 (Part 6)-1984 'Specification for crystal unit holders : Part 6 Metal, solder seal, two pin crystal unit holder Type CX'].

2. Marking — *See* **8** of IS : 8271 (Part 1)-1981.

3. Construction and Workmanship — *See* **7** of IS : 8271 (Part 1)-1981.

4. Test Schedule and Detail Requirements

4.1 *General Conditions for Test* — *See* **9.2** of IS : 8271 (Part 1)-1981.

4.2 *Test Schedule* — The sequence and grouping of type, routine and acceptance tests shall be in accordance with **9.1** of IS : 8271 (Part 1)-1981.

4.3 *Detail Requirements* — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE CX-06

Characteristics	Requirements
a) Type of holder	CX (*see* **1**)
b) Frequency range	16 to 61 MHz
c) Frequency tolerance	
1) Primary operating temperature range	±20 ppm
2) Secondary operating temperature range	±30 ppm
d) Load capacitance	Infinity
e) Mode of oscillation	Third mechanical overtone
f) Temperature range (non-controlled)	
1) Operating	—40 to +90°C
2) Operable	—55 to +40°C and +90 to +105°C
g) Test set, calibration values, rated drive level	*See* Table 2
h) Capacitance shunt	3·5 pF, *Max*
j) Resonance resistance	40 ohms, *Max*
k) Unwanted modes (*see* Note)	None within ±20 percent of the specified frequency with a resonance resistance less than twice the resistance of the desired mode, 40 ohms or whichever is greater
m) Shock [as in **9.15** (severity A) of IS : 8271 (Part 1)-1981]	
1) Frequency change permitted	± 5 ppm
2) Resonance resistance change permitted	± 10 percent
n) Vibration [as in **9.16.1** (severity A) of IS : 8271 (Part 1)-1981]	
1) Frequency change permitted	± 5 ppm
2) Resonance resistance change permitted	± 10 percent
p) Ageing	
Frequency change permitted	5 ppm

Note – *Unwanted Modes* — Insert the crystal unit and an 80 ohm resistor in respective socket of adaptor MX-320/TSM (The adaptor should be affixed to the crystal impedance meter TS-683/TSM.) Adjust the tuning knob of the crystal impedance meter to +20 percent of the specified frequency of the crystal unit, and then very slowly, sweep the knob through the specified frequency of the crystal unit, repeat this procedure from the 20 percent side. The resonance resistance of unwanted modes and the main response shall be computed by exciting each in turn, ascertaining the meter reading and substituting resistors for crystal unit to determine the resistor value which restores the meter reading to that ascertained with the crystal unit in the socket.

Adopted 22 December 1988 Gr 1

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Piezoelectric Devices for Frequency Control and Selection Sectional Committee, LTDC 12 [Ref : Doc : LTDC 12 (1187)]

TABLE 2 TEST SET CALIBRATION VALUES AND RATED DRIVE LEVEL

[*See* Table 1 (g)]

Frequency Range	Calibration Values		Rated Drive Value	Test Set
	Resistance	Register Voltage Drop (volts)		
MHz	ohms		mW	
From 16 to 61	40	0·28	2·0 ± 0·4	TS-683/TSM*

*Used with adaptor MX-3020/TSM.

EXPLANATORY NOTE

This standard (Part 5/Sec 6) covers the requirements of crystal unit, quartz, style QC-29 of JSS 50909 (1971) 'Detail specification for crystal unit, quartz styles QC-29, QC-30, QC-31, QC-32, QC-33, QC-34 and QC-35', issued by the Directorate of Standardization, Ministry of Defence (India).

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